AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) An electrical circuit, comprising:

a differential amplifier, comprising:

an input circuit in communication with a differential input of the differential amplifier, the input circuit comprising:

a first input transistor; and a second input transistor, wherein base electrodes of the first and second input transistors are in communication with the differential input, and wherein emitter electrodes of the first and second input transistors are in communication with each other and a first current source;

a start-up circuit in communication with the input circuit, wherein the start-up circuit is configured to generate a start-up signal to enable subsequent operation of the differential amplifier, the start-up circuit comprising:

a first start-up transistor; and a second start-up transistor, wherein base electrodes of the first and second start-up transistors are in communication with a bias input, wherein emitter electrodes of the first and second startup transistors are in communication with each other and with the first current source, and

wherein collector electrodes of the first and second start-up transistors are in communication with collector electrodes of the first and second input transistors, respectively; and an output circuit in communication with the input circuit and the start

up circuit, wherein the output circuit is in communication with a differential output of the differential amplifier, the output circuit comprising:

a first output transistor;

a second output transistor;

a first impedance circuit; and

a second impedance circuit, wherein base electrodes of the first and second output transistors are in communication with the first and second impedance circuits, respectively, and the collector electrodes of the first and second input transistors, respectively, wherein emitter electrodes of the first and second output transistors are in communication with each other and with the first current source, and wherein collector electrodes of the first and second output transistors are in communication with the first and second impedance circuits, respectively, and the differential output.

2. (Original) The electrical circuit of claim 1, wherein the first and second impedance circuits each comprise a capacitor and a resistor in series.

3. (Original) The electrical circuit of claim 1, wherein the differential amplifier further comprises:

a common-mode feedback circuit in communication with the differential output and second and third current sources, wherein the second and third current sources are in communication with the input and start-up circuits.

4. (Original) The electrical circuit of claim 3, wherein the common-mode feedback circuit comprises:

a comparator for comparing a feedback signal from the differential output with a predetermined reference signal to generate a comparison signal, wherein the comparison signal controls the second and third current sources to control an output level of the differential amplifier; and

first and second resistors in communication with the differential output and an input of the comparator.

5. (Original) The electrical circuit of claim 3, wherein the differential amplifier further comprises:

fourth and fifth current sources in communication with the input and start-up circuits; and

sixth and seventh current sources in communication with the differential output and the output circuit.

6. (Original) The electrical circuit of claim 1, wherein the start-up circuit ceases generation of the start-up signal when the operation of the differential amplifier reaches a steady-state.

7. (Original) The electrical circuit of claim 1, wherein the differential amplifier comprises a fully differential operational amplifier.

8. (Original) The electrical circuit of claim 1, wherein the differential amplifier comprises a Gm cell.

9. (Original) The electrical circuit of claim 1, wherein the electrical circuit is compliant with a standard selected from the group consisting of 802.11, 802.11a, 802.11b, 802.11g and 802.11i.

10. (Original) An electrical circuit, comprising:

a differential amplifier means, comprising:

an input circuit means for receiving a differential input signal, wherein the input circuit means is in communication with a differential input means of the differential amplifier means, and wherein the input circuit means comprises:

first and second input amplifier means, wherein each of the first and second input amplifier means includes first, second and third electrode means, wherein the first electrode means of the first and second input amplifier means are in communication with the differential input means, and wherein the second electrode means of the first and second input amplifier means are in communication with each other and a first current source means;

a start-up circuit means for generating a start-up signal to enable subsequent operation of the differential amplifier means, wherein the start-up circuit means is in communication with the input circuit means, and wherein the start-up circuit comprises:

first and second start-up amplifier means, wherein each of the first and second start-up amplifier means includes first, second and third electrode means, wherein the first electrode means of the first and second start-up amplifier means are in communication with a bias input means, wherein the second electrode means of the first and second start-up amplifier means are in communication with each other and with the first current source means, and wherein the third electrode means of the first and second start-up amplifier means are in communication with the third electrode means of the first and second input amplifier means, respectively; and

an output circuit means for outputting a differential output signal, wherein the output circuit means is in communication with a differential output means of the differential amplifier means and in communication with the input circuit means and the start-up circuit means, and wherein the output circuit comprises:

first and second output amplifier means, wherein each of the first and second output amplifier means includes first, second and third electrode means; and

first and second impedance means, wherein the first electrode means of the first and second output amplifier means are in communication with the first and second impedance means respectively and the third electrode means of the first and second input amplifier means, respectively, wherein the second electrode means of the first and second output amplifier means are in communication with each other and with the first current source means, and wherein the third electrode means of the first and second output amplifier means are in communication with the first and second impedance means, respectively, and the differential output means.

11. (Original) The electrical circuit of claim 10, wherein the differential amplifier means further comprises:

feedback means in communication with the differential output means and second and third current source means, wherein the second and third current source means are in communication with the input and start-up circuit means.

12. (Original) The electrical circuit of claim 11, wherein the feedback means comprises:

means for comparing a feedback signal from the differential output means with a predetermined reference signal to generate a comparison signal, wherein the comparison signal controls the second and third current source means to control an output level of the differential amplifier means; and first and second resistive means in communication with the differential output means and an input of the comparator means.

13. (Original) The electrical circuit of claim 11, wherein the differential amplifier means further comprises:

fourth and fifth current source means in communication with the input and start-up means; and

sixth and seventh current source means in communication with the differential output means and the output circuit means.

14. (Original) The electrical circuit of claim 10, wherein the start-up circuit means ceases generation of the start-up signal when the operation of the differential amplifier means reaches a steady-state.

15. (Original) The electrical circuit of claim 10, wherein the electrical circuit is compliant with a standard selected from the group consisting of 802.11, 802.11a, 802.11b, 802.11g and 802.11i.

16-18. (Cancelled)

19. (Previously Presented) An electrical circuit, comprising:

an amplifier, comprising:

an input circuit in communication with an input of the amplifier;

a start-up circuit in communication with the input circuit, wherein the start-up circuit is configured to generate a start-up signal to enable subsequent operation of the amplifier and the start-up circuit turns off when an output of the amplifier reaches a threshold voltage; and

an output circuit in communication with the output of the amplifier and in communication with the input circuit and the start-up circuit, wherein the start-up circuit comprises:

a first start-up transistor; and

a second start-up transistor, wherein base electrodes of the first and second start-up transistors are in communication with a bias input, wherein emitter

electrodes of the first and second start-up transistors are in communication with each other and with a first current source, and wherein collector electrodes of the first and second start-up transistors are in communication with collector electrodes of first and second input transistors, respectively.

20. (Previously Presented) An electrical circuit, comprising:

an amplifier, comprising:

an input circuit in communication with an input of the amplifier;

a start-up circuit in communication with the input circuit, wherein the start-up circuit is configured to generate a start-up signal to enable subsequent operation of the amplifier and the start-up circuit turns off when an output of the amplifier reaches a threshold voltage; and

an output circuit in communication with the output of the amplifier and in communication with the input circuit and the start-up circuit, wherein the output circuit comprises:

a first output transistor;

a second output transistor;

a first impedance circuit; and

a second impedance circuit, wherein base electrodes of the first and second output transistors are in communication with the first and second impedance circuits, respectively, and collector electrodes of first and second input transistors, respectively, wherein emitter electrodes of the first and second output transistors are in communication with each other and with a first current source, wherein

collector electrodes of the first and second output transistors are in communication with the first and second impedance circuits, respectively, and the output.

21. (Original) The electrical circuit of claim 20, wherein each of the first and second impedance circuits comprises a capacitor and a resistor in series.

22. (Cancelled)

23. (Previously Presented) An electrical circuit, comprising:

an amplifier, comprising:

an input circuit in communication with an input of the amplifier;

a start-up circuit in communication with the input circuit, wherein the start-up circuit is configured to generate a start-up signal to enable subsequent operation of the amplifier and the start-up circuit turns off when an output of the amplifier reaches a threshold voltage;

an output circuit in communication with the output of the amplifier and in communication with the input circuit and the start-up circuit; and

a common-mode feedback circuit in communication with the output and second and third current sources, wherein the second and third current sources are in communication with the input and start-up circuits, wherein the common-mode feedback circuit comprises:

a comparator for comparing a feedback signal from the output with a predetermined reference signal to generate a comparison signal, wherein the

comparison signal controls the second and third current sources to control an output level of the amplifier; and

first and second resistors in communication with the output and an input of the comparator.

24-31. (Cancelled)

32. (Previously Presented) An electrical circuit, comprising:

an amplifier means, comprising:

an input circuit means for receiving an input signal, wherein the input circuit means is in communication with an input means of the amplifier means;

a start-up circuit means for generating a start-up signal to enable subsequent operation of the amplifier means, wherein the start-up circuit means is in communication with the input circuit means and the start-up circuit turns off when an output means of the amplifier means reaches a threshold voltage; and

an output circuit means for outputting an output signal, wherein the output circuit means is in communication with the output means of the amplifier means and in communication with the input circuit means and the start-up circuit means, wherein the start-up circuit means comprises:

first and second start-up amplifier means, wherein each of the first and second start-up amplifier means includes first, second and third electrode means, wherein the first electrode means of the first and second start-up amplifier means are in communication with a bias input means, wherein the second electrode means of the

first and second start-up amplifier means are in communication with each other and with a first current source means, and wherein the third electrode means of the first and second start-up amplifier means are in communication with third electrode means of first and second input amplifier means, respectively.

33. (Previously Presented) An electrical circuit, comprising:

an amplifier means, comprising:

an input circuit means for receiving an input signal, wherein the input circuit means is in communication with an input means of the amplifier means;

a start-up circuit means for generating a start-up signal to enable subsequent operation of the amplifier means, wherein the start-up circuit means is in communication with the input circuit means and the start-up circuit turns off when an output means of the amplifier means reaches a threshold voltage; and

an output circuit means for outputting an output signal, wherein the output circuit means is in communication with the output means of the amplifier means and in communication with the input circuit means and the start-up circuit means, wherein the output circuit means comprises:

first and second output amplifier means, wherein each of the first and second output amplifier means includes first, second and third electrode means; and

first and second impedance means, wherein the first electrode means of the first and second output amplifier means are in communication with the first and second impedance means, respectively, and third electrode means of first and

second input amplifier means, respectively, wherein the second electrode means of the first and second output amplifier means are in communication with each other and with a first current source means, and wherein the third electrode means of the first and second output amplifier means are in communication with the first and second impedance means, respectively, and the output means.

34. (Previously Presented) An electrical circuit, comprising:

an amplifier means, comprising:

an input circuit means for receiving an input signal, wherein the input circuit means is in communication with an input means of the amplifier means;

a start-up circuit means for generating a start-up signal to enable subsequent operation of the amplifier means, wherein the start-up circuit means is in communication with the input circuit means and the start-up circuit turns off when an output means of the amplifier means reaches a threshold voltage;

an output circuit means for outputting an output signal, wherein the output circuit means is in communication with the output means of the amplifier means and in communication with the input circuit means and the start-up circuit means; and

feedback means in communication with the output means and second and third current source means, wherein the second and third current source means are in communication with the input and start-up circuit means.

35. (Original) The electrical circuit of claim 34, wherein the feedback means comprises:

means for comparing a feedback signal from the output means with a predetermined reference signal to generate a comparison signal, wherein the comparison signal controls the second and third current source means to control an output level of the amplifier means; and

first and second resistive means in communication with the output means and an input of the comparator means.

36. (Original) The electrical circuit of claim 34, wherein the amplifier means further comprises:

fourth and fifth current source means in communication with the input and start-up circuit means; and

sixth and seventh current source means in communication with the output means and the output circuit means.

37-44. (Cancelled)